

## **2007 Group Project Proposal**

### **Implementation of the Architecture 2030 Challenge: A Santa Barbara City- and County- Wide Approach to Attaining Carbon Neutrality in the Building Sector**

#### **PROPOSERS:**

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#### **PROBLEM STATEMENT:**

Building construction and maintenance is the single greatest consumer of energy on the planet. To be effective in the fight against global warming, energy use in the building sector must be addressed, and soon. Construction and maintenance of buildings is responsible for 48% of the United States' energy consumption and almost half of the United States' greenhouse gas emissions. In an effort to address the causes of climate change, Ed Mazria and the American Institute of Architecture (AIA) have developed the *Architecture 2030 Challenge*, which calls for immediate energy use reductions to one half the national average for all new and renovated buildings, followed by a 10% reduction every five years. The overall goal of the 2030 Challenge is to achieve carbon neutral status in all US buildings by the year 2030. Considering estimates that by 2035, almost 75% of the built environment will consist of new or renovated buildings, coupled with the fact that energy consumption by buildings is expected to rise by 37% in the next twenty years, the time to address energy use by buildings is upon us.

Additionally, Santa Barbara County is in a vulnerable position with regards to climate change. Local global warming-related risks include sea level rise and increased erosion, increased intensity of rain events, higher risk of destructive fire, and increased incidence of respiratory illness. In the hopes that this Challenge will be adopted on a national level, our proposal is to address the Challenge locally and in the process, create a model for implementation in other cities and counties throughout the nation.

#### **SIGNIFICANCE:**

The AIA 2030 Challenge has been adopted by the US Conference of Mayors, including Santa Barbara's Mayor Marty Blum. Additionally, a group of local stakeholders has joined together to support the initiative and are currently submitting a resolution proposal to the Santa Barbara (SB) City Council that requests official acceptance of the 2030 Challenge and development of an implementation plan (draft resolution attached). To this end, the coalition is seeking assistance in outlining concrete steps to implement the Challenge throughout the City of Santa Barbara and further throughout Santa Barbara County.

#### **OBJECTIVES:**

The overall objective of this group project is to facilitate achievement of the goals of the 2030 Challenge in the City and County of Santa Barbara. To this end, we will take the following steps:

- Assess current acceptance of the Challenge among local industry players from the private and public sectors
- Perform a cost-benefit analysis to determine overall economic feasibility of the initiative to Santa Barbara, and within different sectors

- Identify barriers and incentives to implementation among different building industry segments, including designers, builders, developers, and homeowners
- Perform an economic analysis to determine the most cost-effective implementation strategies
- Prioritize steps that will accelerate policy change within the city and county to achieve building-sector carbon neutrality by 2030
- Work with Santa Barbara's 'Architecture 2030' Coalition to develop an implementation plan for the city and county

### **BACKGROUND INFORMATION:**

The AIA 2030 Challenge is a nationwide initiative that is growing in acceptance. Developed by New Mexico-based architect Ed Mazria, the Challenge addresses the need for buildings, particularly those in the US, to reduce consumption of non-renewable resources and thereby reduce emissions of greenhouse gases to slow or reverse the effects of global warming. Recognizing the urgency of the situation, local stakeholders in the building industry have accepted the Challenge. At this point, research is needed to assess the playing field and players, and develop a game plan that will help our community reach the goals of the Challenge.

### **STAKEHOLDERS:**

- SB building sector community members
- SB City Council
- SB AIA Chapter
- SB Community Environmental Council
- SB Green Building Alliance
- SB Sustainability Project
- SB Built Green
- SB Contractors Association
- SB Homeowners
- UCSB Sustainability Committee
- SB community members
- Humankind

### **DELIVERABLES:**

A final product of the project will be an Implementation Plan that outlines steps for the City and County of Santa Barbara to follow in order to reach the goals of the Architecture 2030 Challenge. The implementation plan will include policy recommendations and potentially education and training materials.

### **APPROACH:**

To develop an implementation plan for reaching the Architecture 2030 Challenge goals, we will consult with local building community stakeholders to assess acceptance of the Challenge. We will also research existing building-sector initiatives to identify incentives and barriers to implementing the Challenge. An economic analysis of potential implementation strategies will require investigation into current costs and benefits of building-related energy reduction technologies. Policy recommendations will be formulated based on prioritized implementation strategies as outlined in the plan. Additionally, if research into development of the plan indicates that education and training is warranted, our group will help design and create such materials.

### **REFERENCES:**

Mazria, Ed. Architecture 2030 [online]. 2005 [cited 2007 Jan 21]. Available from: URL: <http://www.architecture2030.org/home.html>

Environmental Defense. 2001. *Hot Prospects: The Potential Impacts of Global Warming on Los Angeles and the Southland*. Available from:  
[http://www.environmentaldefense.org/documents/494\\_HotProspects.pdf](http://www.environmentaldefense.org/documents/494_HotProspects.pdf)

BuildingGreen, Inc. 2006, December. Climate Change Dominates Greenbuild Conference Agenda. *Environmental Building News*. 15:12. 1,17.

Hawthorne, Christopher. 2003. *Turning Down the Global Thermostat*. Metropolis Magazine. Available from : URL :  
[http://www.metropolismag.com/html/content\\_1003/glo/index.html](http://www.metropolismag.com/html/content_1003/glo/index.html)[http://www.metropolismag.com/html/content\\_1003/glo/index.html](http://www.metropolismag.com/html/content_1003/glo/index.html)

Santa Barbara Architecture 2030 Coalition. 2007. A Draft Resolution of the Council of the City of Santa Barbara Adopting the "Architecture 2030" Challenge.

**CLIENT:**

SB 'Architecture 2030' Coalition

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**ANTICIPATED FINANCIAL NEEDS & SOURCES OF SUPPORT:**

- Cooperation from SB City Council and building-sector stakeholders
- Potential summer internship position for 1-2 project members